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CMI OPERATION AND MAINTENANCE PLAN OPERABLE UNIT NO. 1 (OU1)

Omaha Shops

Prepared for
Union Pacific Railroad Company
Omaha, Nebraska

UNION PACIFIC

ENVIRONMENTAL MANAGEMENT

October 2001

URS
101 South 108th Avenue
Omaha, Nebraska 68154

CORRECTIVE MEASURES IMPLEMENTATION OPERATION AND MAINTENANCE PLAN

UNION PACIFIC RAILROAD
OMAHA SHOPS

Union Pacific Railroad Company
1416 Dodge Street
Omaha, Nebraska 68179

CERTIFICATION

"I certify that this document and all attachments hereto were prepared under my direction or supervision. To the best of my knowledge, information and belief, the information submitted is true, accurate, and complete. I am aware that there are criminal penalties for knowingly providing false information."

Signature: Jeffrey D. McDermott

Name: Jeffrey D. McDermott

Title: Mgr. Environmental Site Remediation

Date: October 29, 2001

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CMCR	Corrective Measures Completion Report
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
mg/kg	milligrams per kilogram (parts per million)
O&M	Operation and Maintenance
Order	Administrative Order on Consent
OU1	Operable Unit No. 1
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
TMV	Toxicity, Mobility, and Volume
UPRR	Union Pacific Railroad Company
URSGWC	URS Greiner Woodward Clyde
URS	URS Corporation
USEPA	United States Environmental Protection Agency

1.1 LOCATION AND BACKGROUND

The Union Pacific Railroad (UPRR) Omaha Shops are located at 9th and Webster Streets in Omaha, Nebraska (North 41°15' 58" latitude, West 95° 55' 40" longitude). The legal description of the facility is Township 15 North, Range 13 East, Section 22. The Omaha Shops encompass approximately 184 acres located north of downtown Omaha, just west of the Missouri River in the Missouri River floodplain (Figure 1-1).

The Omaha Shops include various buildings and production support areas, each having a function in past operations of the facility. The Omaha Shops were in operation for approximately 100 years, with principal functions as a railroad fueling facility, repair shop, paint shop, and car body repair shop for UPRR's locomotive and car fleet.

UPRR used steam engines from the 1860s until the mid-1950s. The original steam engines were fueled by burning wood, coal, fuel oil, and petroleum-based fuel. In the mid-1950s, diesel power became the predominant source of power for train locomotives. During that time, the entire facility was converted from handling steam engines to diesel engines.

From the 1950s to 1988, the site was a major overhaul and maintenance facility for UPRR. In 1988, most of the operations, except the print shop and the car shop, moved to Little Rock, Arkansas. After the operations were moved in 1988, facility demolition began. Specific operations history for Operable Unit 1 (OU1) is presented in the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report (URSGWC 1999).

The Omaha Shops are the subject of a United States Environmental Protection Agency (USEPA) Administrative Order on Consent (Order) under Section 3008(h) of RCRA. The Order requires UPRR to complete a Corrective Measure at OU1. The OU1 site includes the surface soils above the normal high water table within the portion of the Omaha Shops that was acquired by the City of Omaha for the development of a public-use building project (Figure 1-2). This document presents the OU1 Corrective Measures Implementation (CMI) Operation and Maintenance (O&M) Plan for the UPRR Omaha Shops.

1.2 PURPOSE

The purpose of this O&M Plan is to provide procedures for completing operations, long-term maintenance, and monitoring of the soil cover selected in the Final Corrective Measure Decision for OU1 (USEPA 2000). The corrective measure will be maintained to effectively prevent dermal contact with soil containing lead and to allow good surface water drainage. The O&M Plan will be reviewed periodically to determine if any changes should be made to the monitoring and maintenance of the soil cover.

1.3 REPORT ORGANIZATION

The report is organized into the following sections:

Section 1 – Introduction and Purpose: Describes the UPRR Omaha Shops, purpose of the CMI O&M Plan, and report organization.

Section 2 – Corrective Action Objectives: Describes the corrective action objectives including applicable media cleanup standards.

Section 3 – Project Management: Describes the management approach including levels of personnel authority and responsibility, lines of communication and the qualifications of key personnel who will operate and maintain the corrective measures.

Section 4 – System Description: Describes the corrective measure, identifies applicable equipment, and provides schematics or process diagrams to illustrate system design and operation.

Section 5 – Personnel Training: Describes the O&M personnel training process, appropriate service visits by experienced personnel to supervise the installation, adjustment, start-up and operation of the treatment systems, and training covering appropriate operational procedures once the start-up has been successfully accomplished.

Section 6 – Start-Up Procedures: Describes all applicable system start-up procedures and operational testing.

Section 7 - Operation and Maintenance Procedures: Describes normal operation and maintenance procedures including: a description of tasks for operation; a description of tasks for maintenance; a description of prescribed treatment or operation conditions; and a schedule showing the frequency of each O&M task.

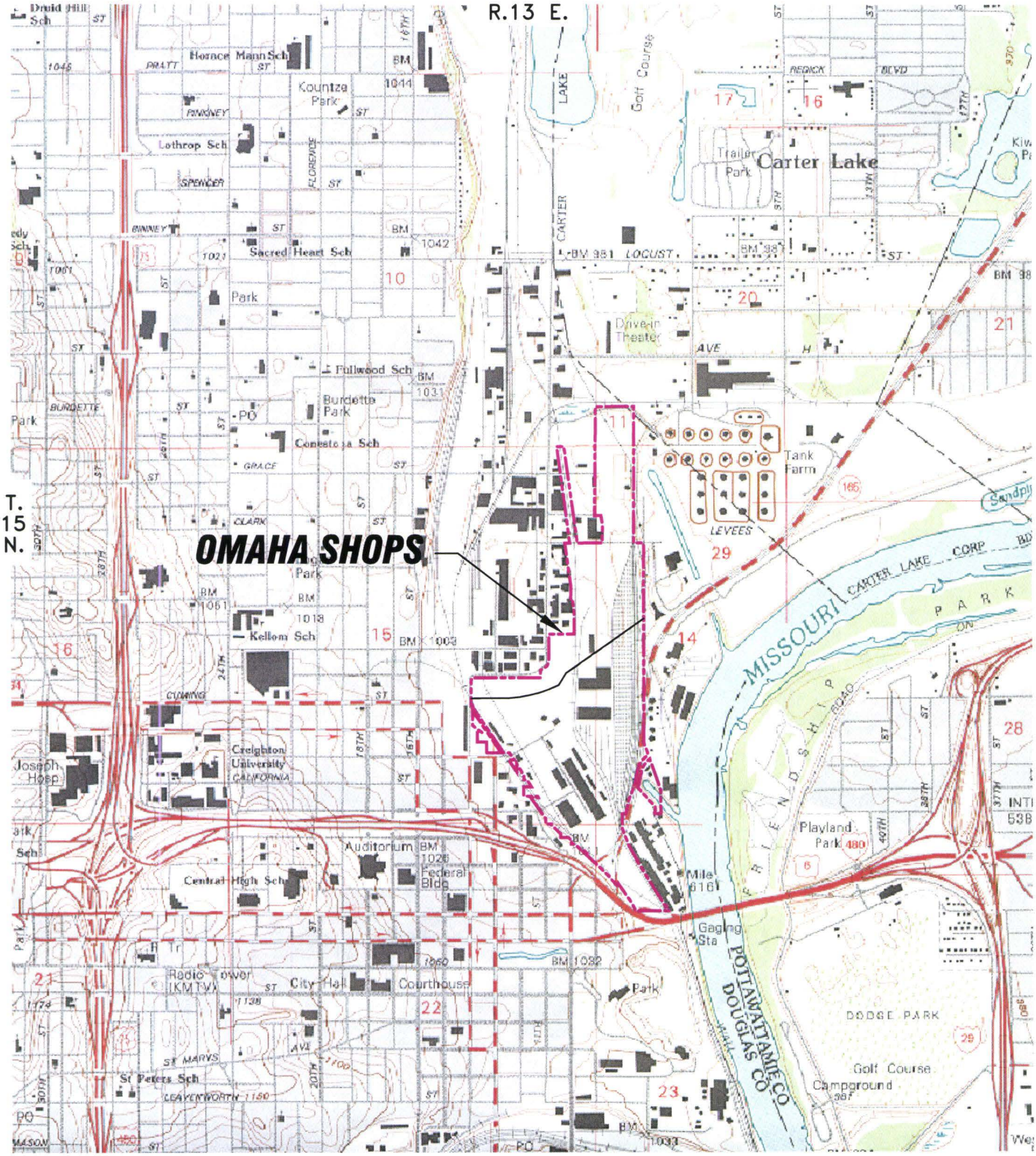
Section 8 - Replacement Schedule

Section 9 - Waste Management Practices: Describes any wastes which may be generated by operation of the corrective measure and how the wastes will be managed.

Section 10 - Corrective Measures Completion Criteria: Describes the process and criteria for determining when corrective measures have achieved corrective action objectives, the process and criteria for determining when maintenance and monitoring may cease, and when satisfaction of the completion criteria will trigger preparation and submittal of the Corrective Measures Completion Report (CMCR).

Section 11 - Contingency Procedures: Describes contingency and notification procedures necessary to ensure system operation in a manner protective of human health and the environment.

Section 12 - References



NEBRASKA

QUADRANGLE LOCATION

BASE MAP SOURCE: USGS 7.5 MINUTE SERIES (TOPOGRAPHIC) QUADRANGLE MAP OF OMAHA NORTH, NE.–IA., 1994.

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2000 1000 0 2000

SCALE IN FEET

February 06, 2001 3:45:57 p.m.
Drawing: T:\91MC204\FIG-1.DWG (DAP)
Xrefs: uprrpropline2.DWG

OMAHA SHOPS LOCATION

UNION PACIFIC

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

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DRN BY DAP	DATE 06/19/01	PROJECT NO. 45-091MC204.03	FIG. NO. 1-1
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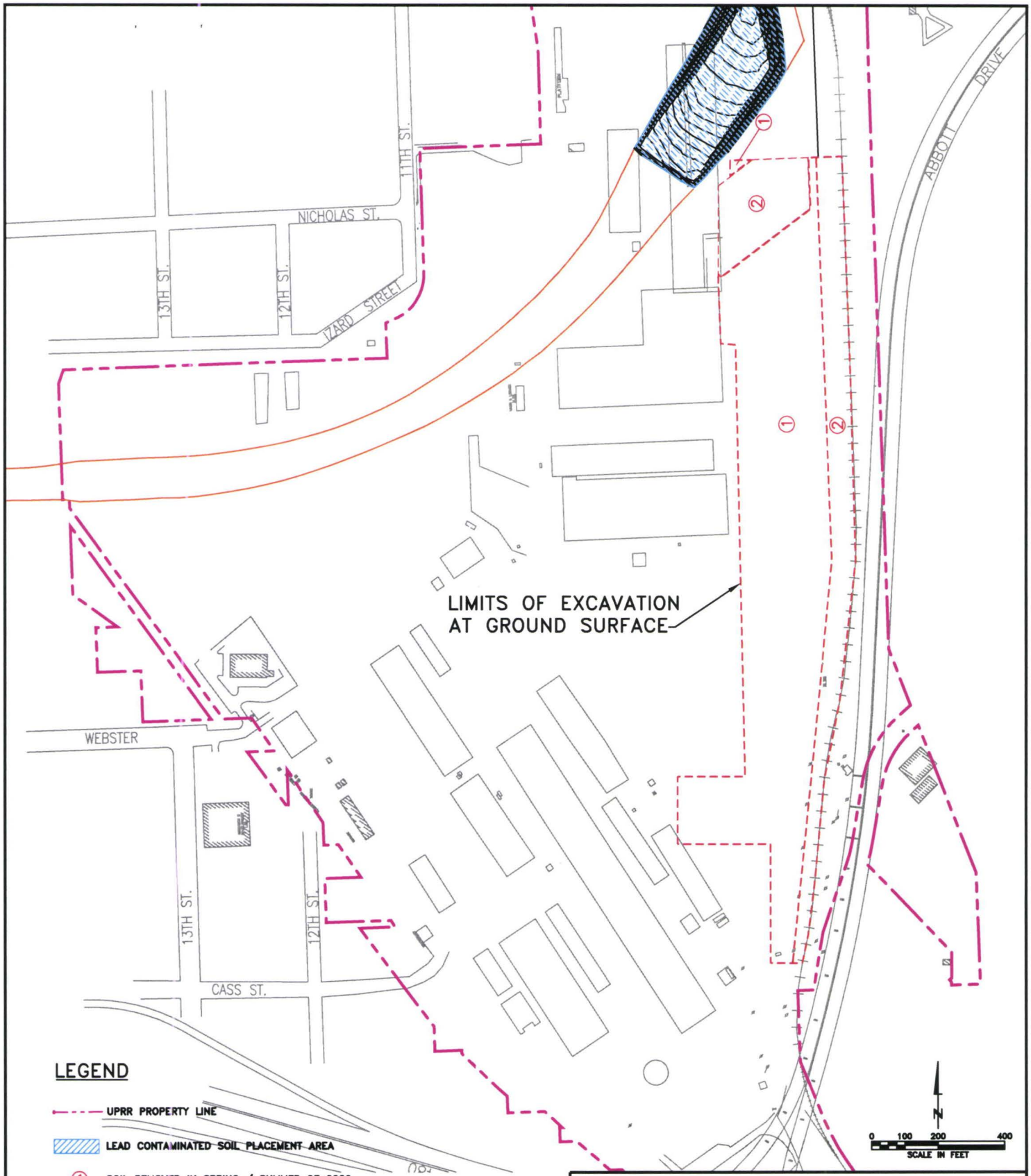

EXCAVATION AND ON-SITE FILL LIMITS

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The corrective action objectives focus on the exposure setting for which protection will be provided. The exposure settings take into account the chemical of potential concern, media of concern, and exposure pathways. Specific information on the development of the corrective measure objectives is presented in the Corrective Measures Study (CMS) for OU1 (URSGWC 2000). The corrective measure objectives for OU1, based on proposed future land use, site knowledge, and potential risks, include:

- Reducing the potential for the current occupants, construction workers, and recreational users to be exposed to site surface and shallow soils containing lead in excess of 1,218 milligrams per kilogram (mg/kg)
- Ensuring objectives continue to be met after the completion of future construction work

3.1 MANAGEMENT APPROACH

The overall management approach for this corrective measure project was designed to assign clear responsibilities for various project functions and to establish appropriate lines of communication to facilitate efficient completion and closure of the corrective measure.

3.2 PROJECT ORGANIZATION AND RESPONSIBILITIES

The OU1 portion of the Omaha Shops was formerly owned by UPRR. UPRR is responsible as Project Manager for completion of all activities described in the Order. UPRR will also coordinate on-site investigation activities and on-going facility-related work activities to maintain access to work areas. UPRR and/or its contractor(s) will be responsible for leading the fieldwork effort, evaluating site data, developing corrective measures, and preparing the reports.

The USEPA Project Manager has the overall responsibility of all phases of the investigation. Responsibilities include ensuring the project objectives have been met following USEPA protocols.

The UPRR Project Manager has overall responsibility for assuring the project meets quality objectives. The UPRR Project Manager has responsibility and authority to accept or reject subcontracted work and to stop work, if needed. All communications between the UPRR Omaha Shops team and USEPA will be undertaken through the UPRR Project Manager.

The Contractor(s) Project Manager has primary responsibility for the completion of all activities on the project. The Contractor(s) Project Manager is responsible to UPRR for the day-to-day control of planning, scheduling, cost control, and implementation of the project, and for the development of the technical reports. The Contractor(s) Project Manager monitors all project personnel in planning, coordinating, and controlling all technical aspects of the tasks.

The Contractor(s) Health and Safety Officer has the responsibility to monitor and verify that the work is performed in accordance with the Health and Safety Plan written for the Omaha Shops. The Contractor(s) Health and Safety Officer will advise the Contractor(s) Project Manager regarding health and safety issues, but will function independently of the Contractor(s) Project Manager. The Contractor(s) Health and Safety Officer has the authority to stop any fieldwork if and health and safety issues arise.

Each member of the Project Staff is responsible for understanding and implementing the quality assurance/quality control (QA/QC) program as it applies to their project activities. The Project Staff are responsible to the Contractor(s) Project Manager for completion of assigned project activities.

3.3 PROJECT COMMUNICATION

3.3.1 Regulatory Agencies

All communication with regulatory agencies will be undertaken by UPRR.

3.3.2 Periodic Reporting

Communications and status reports will be completed by UPRR. Status reports summarizing the progress of work, describing problems encountered and corrective measures undertaken, and updating the project schedule will be submitted to USEPA on a quarterly basis by UPRR.

3.3.3 Project Deliverables

Project deliverables, such as the field inspection reports, will be completed by the party responsible for completing the inspection. Following review by UPRR, project deliverables will be submitted to USEPA.

3.3.4 Meetings

Meetings between the UPRR and USEPA will be scheduled when the parties agree a meeting will be mutually beneficial for communicating project-related plans, data, and evaluations. Annual meetings may be scheduled to review inspection reports and discuss potential changes to the monitoring and maintenance of the soil cover.

The corrective measure selected for OU1 was based on the objectives that were protective of public health and the environment set for the City of Omaha's proposed redevelopment of OU1. The scope of the corrective measure generally included:

- Removal of subsurface soil where contaminant concentrations exceed corrective measure objectives
- Removal of surface soil where contaminant concentrations exceed corrective measure objectives
- Use of institutional controls, including deed restrictions and local zoning requirements, in order to ensure future use is consistent with risk assessment and corrective action objectives for protection of human health

4.1 SELECTION OF CORRECTIVE MEASURE

The corrective measure for OU1 was selected from three alternatives considered to be feasible methods of addressing lead-contaminated soils. The three alternatives are as follows:

- Excavate and off-site disposal of lead-contaminated soils
- Cover lead-contaminated soils
- Excavate and on-site disposal of lead-contaminated soils

The corrective measure was selected using a detailed screening process based on five criteria: long-term reliability and effectiveness; reduction of toxicity, mobility, and volume (TMV); short-term effectiveness; implementation; and costs. Based on this screening, an alternative was selected which best addresses the lead contamination in soils. The proposed corrective measure, which provides the best balance of the selection factors, is excavation and on-site disposal. Specific information on the selection process is detailed in the Corrective Measures Study (URSGWC 2000).

4.2 DESCRIPTION OF CORRECTIVE MEASURE

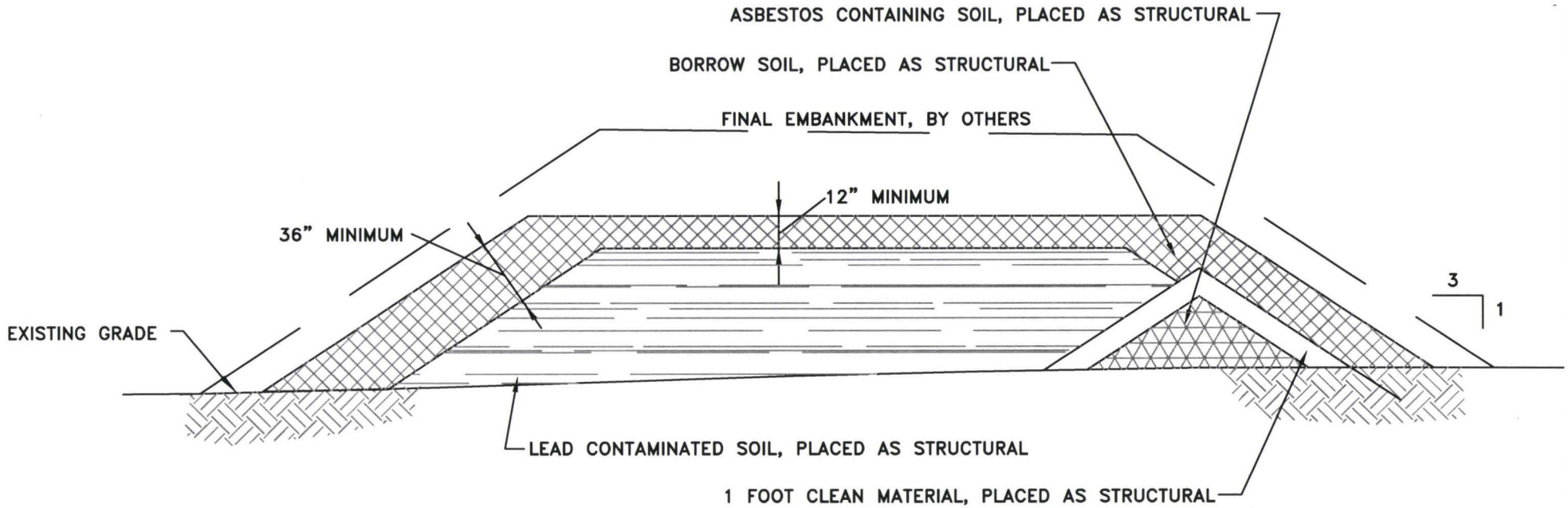
The selected corrective measure, excavation and on-site disposal, consisted of excavating the top 12 inches of site soils in areas that contain greater than 1,218 mg/kg of lead, except in the area under the proposed Abbott Drive/Cuming Street road embankment. Contaminated soil in areas that had subsurface construction were excavated below 12 inches to achieve the corrective action objectives. Due to the logistics of constructing a new rail yard and removing existing tracks, the excavation was completed in two phases.

Prior to excavation, the existing grass was mowed, collected, and shipped to a landfill. Concrete slabs were demolished, stockpiled, ground up, and reused or hauled off site. Excavated soils were used as a base in the roadway embankment for the Cuming Street and Abbott Drive bridge over the UPRR tracks. During excavation, the top 3 inches of soil were stockpiled for use in the toe of the proposed roadway embankment. The bottom 9 inches of excavated soil were placed in the proposed roadway embankment. The top of the embankment was covered with 12 inches of

clean soil and the side slopes covered with 36 inches of clean soil (Figure 4-1). The cover was graded in such a manner to prevent ponding of rainwater on the surface of the cover. A layer of colored woven fabric was placed between the lead containing soil and the clean soil backfill as a permanent marker during any future intrusive work. Appropriate dust control measures were taken to prevent exposure to contaminants both during the excavation of lead-contaminated soils and during construction of the cover.

4.3 PERFORMANCE STANDARDS

In developing the risk assessment presented in the RFI report (URSGWC 1999), it was assumed that OU1 would be developed into a convention center and arena complex as proposed by the City of Omaha. The corrective measure was designed to provide adequate protection of workers during construction activities and protection of the on-site workers and recreational users of the facility. Protection was achieved by reducing the potential for exposure to site surface and shallow soils with lead levels in excess of 1,218 mg/kg.



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NOTES:

1. COLORED FABRIC PLACED ON TOP OF ASBESTOS AND ALSO ON TOP OF LEAD TO DEMARK SURFACES.

TYPICAL ROADWAY EMBANKMENT CROSS SECTION

OMAHA SHOPS
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There is no specialized training necessary to complete the field inspections of the soil cover.

There are no start-up procedures required with the soil cover.

7.1 INSPECTION

The soil cover, including the sideslopes, will be inspected semiannually for 1 year after the completion of surface pavement installation and embankment seeding for visually observable settlement, cracking, sloughing, erosion, loss of vegetation, growth of trees or brush, rodent holes, or other deleterious conditions. In the event of severe weather, such as a tornado or major rainstorm (precipitation event of 1 inch or more in a 24-hour period), the soil cover will be inspected within 1 week of the event. The semiannual inspections will be scheduled for late June and late November and the annual inspections will be scheduled for late June. The person(s) completing the inspection will complete a Field Inspection Report (Figure 7-1) during each inspection event.

7.2 MAINTENANCE AND REPAIR

Most of the maintenance for the soil cover will be on an "as-needed" basis. All items found to be damaged will be noted on a site drawing attached to the field inspection report, and repaired according to the specification for the original construction. Animal burrows, excessive soil ruts or erosion rills, and surface depressions will be filled with clean soil, regraded, and revegetated. Areas where the vegetation has deteriorated so that total bare spots exceed 2 percent of the vegetated area will be fertilized or seeded as appropriate.

7.3 REPORTING

7.3.1 Inspection

Following each field inspection, a written report will be prepared by UPRR and/or its contractor(s) and sent to the USEPA within 30 days of completion of the inspection. Each report will summarize the inspection results and provide a schedule for repair of any deficiencies observed.

7.3.2 Maintenance and Repair

Along with each inspection report described above, a written maintenance and repair report will be prepared and sent to the USEPA by UPRR and/or its contractor(s). The maintenance and repair report will describe in detail any maintenance and/or repairs made since the last maintenance and repair report. The report will describe any on-going maintenance during the next reporting period, describe in detail any necessary or proposed repairs, and present a schedule for these repairs.

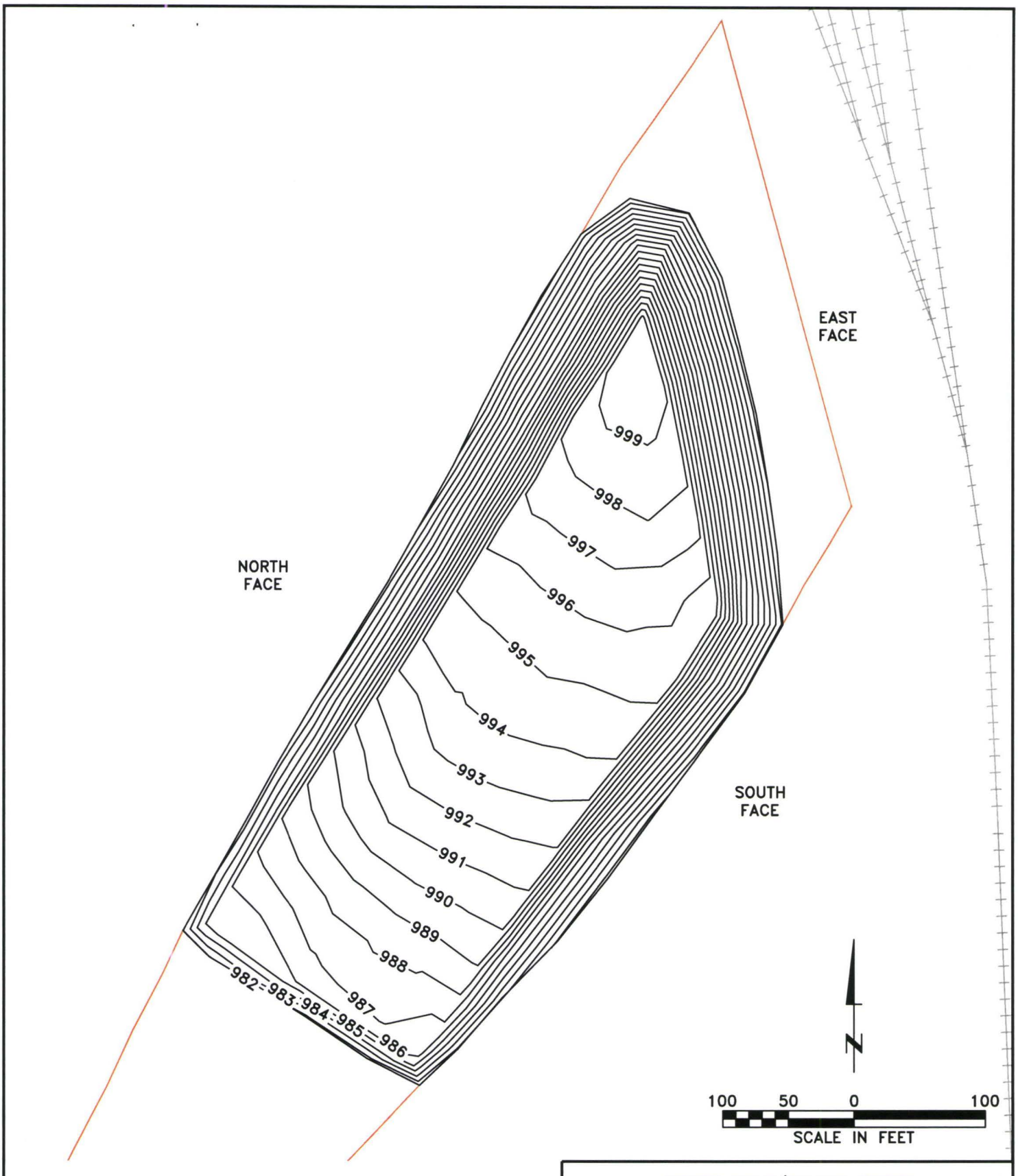
UNION PACIFIC RAILROAD
FIELD INSPECTION REPORT
ABBOTT DRIVE/CUMING STREET WEST EMBANKMENT
OMAHA, NEBRASKA
U.S. EPA DOCKET NO. RCRA-7-2000-0026

Date and Time: _____ Weather: _____

Inspected By: _____ Reviewer: _____

ITEM	YES*	NO	COMMENTS/RECOMMENDED MAINTENANCE
Cover System - North Face			
Visible Settlement			
Ponding			
Topsoil Erosion			
Loss of Vegetation			
Animal or Rodent Burrows			
Poor Pavement Condition			
Other (Identify)			
Cover System - East Face			
Visible Settlement			
Ponding			
Topsoil Erosion			
Loss of Vegetation			
Animal or Rodent Burrows			
Poor Pavement Condition			
Other (Identify)			
Cover System - South Face			
Visible Settlement			
Ponding			
Topsoil Erosion			
Loss of Vegetation			
Animal or Rodent Burrows			
Poor Pavement Condition			
Other (Identify)			
Additional Comments or Observations (Attach Additional Pages if Necessary)			

* - For all items with a "YES" response, show location on an attached site map.



LEGEND

RAILROAD TRACK

TOE OF CUMING ST / ABBOTT DRIVE EMBANKMENT

ABBOTT DRIVE/CUMING STREET
WEST EMBANKMENT

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

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DRN BY DAP	DATE 06/19/01	PROJECT NO. 45-091MC204.02	FIG. NO. 7-1
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Xrefs: uprrpropline2.DWG DRILLHOLES.DWG

There is not a replacement schedule in place as no equipment has been installed and repair to the soil cover will be completed on an "as-needed" basis.

It is not anticipated that any waste materials will be generated during the life of the soil cover.

The corrective measure will have achieved the corrective action objectives after completion of surface pavement installation and embankment seeding. The O&M will cease at the conclusion of one year of monitoring following the placement of seeding. At that time, the CMCR will be prepared and submitted to the USEPA.

Ten business days prior to any intrusive activities, UPRR must be notified of the activity and the details of the activity. The details will include the timing of the intrusive activity, type and depth of the intrusive activity, and repair or abandonment procedures of the intrusive activity. If the intrusive activity is below the demarcation fabric, the soil disturbed below the demarcation fabric must be returned to the area of disturbance in the same order as it was removed. If problems occur in the field where changes to the current designed soil cover are necessary, they will be clearly noted, including the reason for the change and the necessary actions required to repair or complete the corrective measure. All changes will require notification of the USEPA before implementation.

In the event of a major breakdown and/or the complete failure of the soil cover, the USEPA will be verbally notified within 24 hours of the event, and will receive written notice of the incident within 72 hours of the event. The written notice will include the specifics of the event, what response action is being taken and/or is planned, and any potential impacts on human health and/or the environment.

United States Environmental Protection Agency (USEPA). 1999. Administrative Order on Consent. Union Pacific Railroad Omaha Shops. April.

United States Environmental Protection Agency (USEPA). 2000. Final Corrective Measure Decision Operable Unit No. 1. June.

URS Greiner Woodward Clyde (URSGWC). 1999. RCRA Facilities Investigation Report, UPRR Omaha Shops, Omaha, Nebraska. June.

URS Greiner Woodward Clyde (URSGWC). 2000. Corrective Measures Study, Operable Unit No. 1 (OU1), UPRR Omaha Shops, Omaha, Nebraska. February.